

## Denton County Electric Cooperative

### CoServ Advanced Metering Project

#### Abstract

The Denton County Electric Cooperative (CoServ Electric) Advanced Metering project involves the installation of advanced metering infrastructure (AMI) throughout CoServ Electric's service territory and explores the application of distribution automation and customer systems. The project is aimed at improving customer understanding of their electricity usage, reducing operations and maintenance costs, and improving awareness of and response to distribution system outages. The project implements two-way communications to: (1) provide customers with more timely electricity usage information, (2) identify when and where outages are occurring, and (3) demonstrate the performance of select distribution automation, load management, and customer systems equipment.

#### Smart Grid Features

**Communications infrastructure** includes an unlicensed wireless radio frequency network that enables two-way communication between meters and utility data systems and allows for the monitoring and control of select distribution automation equipment.

**Advanced metering infrastructure** includes a system-wide replacement of all 163,151 residential meters and all 15,391 commercial and industrial meters. These advanced meters provide more timely and frequent load data for improving distribution operations, forecasting, and planning. This information enables CoServ Electric and its wholesale power provider to better plan for peak-demand events and reduces generation and ancillary services costs. Operational cost savings are derived from the automation of meter reading, customer services activities, and enhanced theft detection. AMI features include outage and restoration notification and remote service switches so that CoServ Electric can respond to outages and customer requests faster and more efficiently.

**Advanced electricity service options** offered through the project include a small number of in-home displays and programmable communicating thermostats to test their performance and customer acceptance in conjunction with the AMI communications network for information feedback and load management.

#### At-A-Glance

Recipient: Denton County Electric Cooperative

State: Texas

NERC Region: Texas Reliability Entity

Total Budget: \$40,966,296

Federal Share: \$17,205,844

Project Type: Advanced Metering Infrastructure and  
Customer Systems  
Electric Distribution Systems

#### Equipment

- 178,542 Smart Meters
- AMI Communication Systems
  - Meter Communications Network
  - Backhaul Communications
- Meter Data Management System
- 10 In-Home Displays
- 10 Programmable Communicating Thermostats
- 10 Direct Load Control Devices
- Distribution Automation Equipment (pilot-scale demonstration)
  - Distribution Automation Communications Network
  - Automated Distribution Circuit Switches
  - Automated Capacitors
  - Automated Voltage Regulators

#### Key Targeted Benefits

- Reduced Meter Reading Costs
- Reduced Operating and Maintenance Costs
- Increased Electric Service Reliability and Power Quality
- Reduced Costs from Equipment Failures and Theft
- Optimized Generator Operation
- Reduced Ancillary Service Cost
- Reduced Greenhouse Gas and Criteria Pollutant Emissions
- Reduced Truck Fleet Fuel Usage

**Denton County Electric Cooperative** (continued)

**Direct load control devices** deployed by the project include field and laboratory tests of up to 10 devices to assess the viability of using AMI communications networks to support load-control strategies for customer appliances and equipment.

**Distribution automation systems** equipment includes a demonstration project to test the performance of a small number of distribution automation devices in conjunction with the AMI communications network and to demonstrate the capability of the AMI communications network to support distribution automation functions.

**Timeline**

Key Milestones	Target Dates
Proof of concept installation begins	Q1 2011
Proof of concept installation complete	Q2 2011
Go/no-go decision	Q3 2011
Full deployment equipment begins	Q1 2012
Full deployment equipment complete	Q2 2013
Project complete	Q1 2014

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